REMARKS

By the present amendment, claims 3 and 5 have been amended to clarify the invention.

Claims 1-6 remain pending in the application.

In the Office Action, the Examiner rejected claims 3 and 5 under 35 U.S.C. §112, second paragraph.

Claims 1-3 were rejected under 35 U.S.C. §103(a) as being unpatentable over Honda in view of Sano et al.

Claims 4 and 6 were objected to as being dependent upon a rejected base claim, but was indicated as being allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 5 was objected to as being rejected under 35 U.S.C. §112, second paragraph, but would be allowable if the 35 U.S.C. §112, second paragraph rejection was overcome.

In view of the arguments that follow, Applicant respectfully traverses the Examiner's rejection of claims 1-3 and 5.

Rejection Under 35 U.S.C. § 112, second paragraph

The Examiner rejected claims 3 and 5 under 35 U.S.C. §112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Examiner asserted that in claims 3 and 5, the word "otherwise" is indefinite because it is unclear as to what follows the word. Applicant respectfully submits that claims 3 and 5 have been amended to clarify the invention. Accordingly, the rejection of claims 3 and 5 should be withdrawn.

Rejection Under 35 U.S.C. § 103

The Examiner rejected claims 1-3 under 35 U.S.C. §103(a) as being unpatentable over Honda in view of Sano et al. The rejection is respectfully traversed.

Applicant's claim 1 recites an AGC amplifier circuit comprising: a fixed-gain amplifier circuit whose gain is not controlled by an AGC voltage; and a variable-gain amplifier circuit whose gain is controlled by the AGC voltage; wherein, when the AGC voltage is within a predetermined voltage range, an overall gain of the AGC amplifier circuit is varied by the variable-gain amplifier circuit and, when the AGC voltage is outside the predetermined voltage range, the overall gain is kept constant by the fixed-gain amplifier circuit.

The Examiner alleged that Honda teaches a fixed-gain amplifier circuit whose gain is not controlled by an AGC voltage, by referencing the abstract, Figure 1, and col. 3, lines 49-59; a variable-gain amplifier circuit whose gain is controlled by the AGC voltage, by referencing the abstract, Figure 1, and col. 3, lines 49-59. The Examiner further alleged that when the AGC voltage is within a predetermined voltage range, an overall gain of the AGC amplifier circuit is varied by the variable-gain amplifier circuit, by referencing Figure 6 and alleging that when voltage Vc is within a certain range, the

gain is varied, otherwise the gain is constant; and when the AGC voltage is outside the predetermined voltage range, the overall gain is kept constant, by referencing Figure 6.

The Examiner admitted that Honda does not specifically teach that the overall gain is kept constant by the fixed-gain amplifier circuit. To cure the deficiencies of Honda, the Examiner alleged that Sano et al. teaches the overall gain is kept constant by the fixed-gain amplifier circuit, by referencing the abstract, Figure 3, and col. 3, lines 6-16.

Applicant respectfully submits that neither Honda nor Sano et al., taken singly or in combination (assuming these teachings may be combined, which Applicant does not admit), disclose or teach an AGC amplifier circuit in which "when the AGC voltage is within a predetermine voltage range, an overall gain of the AGC amplifier circuit is varied by the variable-gain amplifier circuit and, when the AGC voltage is outside the predetermined voltage range, the overall gain is kept constant by the fixed-gain amplifier circuit," as recited in claim 1.

Honda admits a prior art voltage-controlled amplifier that amplifies an input signal (Vin) with a gain variable controlled by a varying control voltage (Vc) and provides a gain variable according to the level of Vc. When the gain of the voltage-controlled amplifier is zero, Vc is zero. As Vc increases, the gain is increased. However, when Vc is reduced from zero, the gain is increased in an opposite phase. Honda further admits in prior art Figure 6, when a voltage-controlled amplifier unit gain range is desired of 8±2, the maximum gain may be set to 10, and the range of Vc may be set to be between 6-10, as shown by range b. The gain in Figure 6, a portion above gain 10 or a

portion where Vc is greater than the upper limit of range b, is kept constant. Therefore, the overall gain of the admitted prior art of Honda does not disclose an "overall gain" that is "kept constant by the fixed-gain amplifier circuit." Additionally, when linearity and temperature characteristics of the voltage-controlled amplifier unit are varied, changes in the overall voltage-controlled amplifier gain with respect to Vc are suppressed.

The gain of the voltage-controlled amplifier unit of Honda is not analogous to the variable-gain amplifier circuit of the present invention. Specifically, **the gain of the voltage-controlled amplifier unit** of Honda is varied according to the level of Vc. However, in the present invention, the variable-gain amplifier circuit varies **an overall gain of the AGC amplifier** when the AGC voltage is within a predetermined voltage range. Moreover, there is nothing in Honda that discloses that when the AGC voltage is outside the predetermine voltage range, the overall gain is kept constant by the fixed-gain amplifier circuit. Honda merely discloses that the gain of the voltage-controlled amplifier unit is variable both positively and negatively from zero at the center of a range, the positive and negative gain ranges being each set to be less than the fixed gain of the basic amplifier unit. The basic amplifier of Honda unit amplifies a differential voltage between the input signal and the reference signal with a fixed gain.

Sano et al. do not cure the deficiencies of Honda. Sano et al. merely disclose an amplifier circuit that includes a variable gain amplifier that amplifies an input signal received at an input terminal, and a constant gain amplifier connected in series to an output of the variable gain amplifier and amplifies the output signal. The output signal of Sano et al. is a control signal that is fed to a gain control circuit in order to control the

gain of the variable gain amplifier. Sano et al. further disclose that the output signal of the constant gain amplifier is outputted from the output terminal as an output signal of the amplifier circuit. However, there is nothing in Sano et al. that teaches the overall gain is kept **constant** by the **fixed** gain amplifier as alleged by the Examiner. The constant gain in the constant gain amplifier of Sano et al. **amplifies** an output signal of the **variable** gain amplifier. Moreover, the gain control circuit generates the control signal during a time period in which a level of the output signal of the constant gain amplifier is higher than a reference level which is a predetermined value lower than a peak value of the output signal of the constant gain amplifier in order to variably controls the gain of the variable gain amplifier. Therefore, Sano et al. does not teach that when the AGC voltage is outside the predetermined voltage range, the overall gain is kept constant by the fixed-gain amplifier circuit.

Applicant further submits that since Sano et al. fail to disclose "the overall gain is kept constant by the fixed-gain amplifier circuit," the alleged combination of Honda and Sano et al. fail to disclose "when the AGC voltage is outside the predetermined voltage range, the overall gain is kept constant by the fixed-gain amplifier circuit." The voltage range Vc disclosed in Honda is a varying control voltage that controls the gain of input signal Vin of the voltage-controlled amplifier. Sano et al. merely discloses a gain control circuit that variably controls the gain of the variable gain amplifier and the amplifier circuit operates stable when a change occurs in a power source voltage provided to the amplifier circuit. The predetermined voltage range of Honda and Sano et al. are not identical. Therefore, the combination of Honda and Sano et al. does not provide "when the AGC

voltage is within a predetermined voltage range, an overall gain of the AGC amplifier circuit is varied by the variable-gain amplifier circuit, and when the AGC voltage is outside the predetermined voltage range, the overall gain is kept constant by the fixed-gain amplifier circuit."

Accordingly, the Examiner has failed to establish a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine the reference teachings. Second, the proposed modification of the prior art must have had a reasonable expectation of succeeding, as determined from the vantage point of such a skilled artisan at the time the invention was made. Third, the prior art references, when combined, must teach or suggest all the claim limitations. *See* M.P.E. P. §2143.

In view of the above reasons, Applicant respectfully submits that the asserted combination of Honda and Sano et al. fails to establish a *prima facie* case of obviousness of independent claim 1, or any claim depending therefrom.

Applicant also respectfully submits that the Examiner's conclusion in claim 1 is based on improper hindsight reasoning. *See* M.P.E.P. § 2142. The Examiner may not utilize the Applicant's own disclosure as motivation for altering a reference that lack sufficient disclosure to teach the Applicant's claimed invention. Accordingly, Applicant respectfully submits that the rejection of claim 1 should be withdrawn.

With respect to dependent claim 2, the Examiner alleged that Honda teaches a minimum gain of the AGC amplifier circuit is set to be equal to the gain of the fixed-gain amplifier circuit, by referencing col. 3, line 62 – col. 4, line 2.

Applicant respectfully submits that there is nothing in Honda that discloses or teaches "a minimum gain of the AGC amplifier circuit is set to be equal to the gain of the fixed-gain amplifier circuit," as recited in claim 2.

Honda discloses the gain of an output signal is set variably with respect to the input signal. Honda further discloses that the gain of the basic amplifier unit is set to a mid point gain between G1 and G2, and the gain of the voltage-controlled amplifier unit is variable between G1 and G2, with the mid point gain of the basic amplifier unit as the center gain.

The setting of the basic amplifier unit at a **mid point gain** between G1 and G2, and the gain of the voltage-controlled amplifier unit set **variably** between G1 and G2 of Honda is not analogous to a **minimum gain** of the AGC amplifier circuit that is set to the **gain** of the fixed-gain amplifier circuit. Moreover, the gain of the basic amplifier unit and voltage-controlled amplifier unit are not equal. In claim 1, the Examiner admitted that Honda does not teach that the overall gain is kept constant by the fixed gain amplifier circuit, and alleged that Sano et al. taught the recitation of the claim. Now, the Examiner alleges that in claim 2, Honda teaches a minimum gain of the AGC amplifier circuit is set to equal the gain of the fixed-gain amplifier circuit. Applicant respectfully submits that the Examiner's allegation is inconsistent and in view of the reasons given above, the rejection of claim 2 should be withdrawn.

With respect to claim 3, the Examiner alleged that claim 3 is rejected for the same reasons as discussed above with respect to claim 1. The Examiner further alleged that Honda inherently teaches feeding an identical signal to the fixed-gain amplifier circuit and to the variable-gain amplifier circuit, by referencing Figure 1.

Applicant respectfully submits that neither Honda nor Sano et al., taken singly or in combination (again, assuming these teachings may be combined, which Applicant does not admit), disclose or teach an AGC amplifier circuit "wherein, when an output of the variable gain amplifier circuit exceeds an output of the fixed-gain amplifier circuit, the output of the fixed-gain amplifier circuit is delivered to an output terminal instead of the output of the variable-gain amplifier circuit, which is otherwise delivered to the output terminal," as recited in claim 3.

Honda discloses an adder for adding the output signals Vo1 of the voltage-controlled amplifier unit, and Vo2 of the basic amplifier unit, in which the addition provides an output signal Vout. There is nothing in Honda that discloses that when Vo2 exceeds Vo1, Vo1 is delivered to an output terminal instead of Vo2, which is otherwise delivered to the output terminal.

Again, Sano et al. do not cure the deficiencies of Honda. Sano et al. merely disclose an amplifier circuit that includes a variable gain amplifier that amplifies an input signal received at an input terminal, a constant gain amplifier that amplifies an output signal of the variable gain amplifier. Sano et al. further disclose a gain control circuit that is responsive to an output signal of the constant gain amplifier for variably controlling a gain of the variable gain amplifier. There is nothing in Sano et al. that

discloses that when the output of the variable gain amplifier exceeds an output of the constant gain amplifier circuit, the output of the constant gain amplifier is delivered to an output terminal instead of the output of the variable-gain amplifier circuit, which is otherwise delivered to the output terminal.

In view of the reasons given above, Applicant respectfully submits that neither Honda nor Sano et al. disclose or teach claim 3, and the rejection of claim 3 should be withdrawn.

Again, Applicant respectfully submits that the asserted combination of Honda and Sano et al. fails to establish a *prima facie* case of obviousness of independent claim 3, or any claim depending therefrom.

Applicant also respectfully submits that the Examiner's conclusion in claim 3 is also based on improper hindsight reasoning. *See* M.P.E.P. § 2142. The Examiner may not utilize the Applicant's own disclosure as motivation for altering a reference that lack sufficient disclosure to teach the Applicant's claimed invention. Accordingly, Applicant respectfully submits that the rejection of claim 3 should be withdrawn.

Conclusion

In view of the foregoing amendments and remarks, Applicant respectfully requests the reconsideration and reexamination of this application and the timely allowance of the pending claims. Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Demetra R. Smith-Stewart (Reg. No. 47,354), to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1. 17; particularly, extension of time fees.

Respectfully submitted,

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